

NOTES ON MESEMBRYANTHEMUM AND ALLIED GENERA

H. M. L. BOLUS

Astridia vanheerdei L. Bol. sp. nov.—Planta 1 visa, 19 cm. alta; partes herbaceae glabrae politaeque, glaucae virides; caulis 1 cm. diam.; rami primarii ad 8 mm. diam., internodiis inclusis vel ad 2 cm. longis; ramuli floriferi 4-foliati; folia ascendentia, maxima subfalcata, supra plana, acuta vel subobtusata, lat. visa prope apicem $\pm$ angustata, eis paris si appressis figuram ovalem vel late ovatam formantibus, lateribus leviter convexis vel altero plano, 3—6.7 cm. longa, basi 1.2—1.6 cm. lata, medio 1.5—2.2 cm. diam.; pedunculi subnulli; bracteae ad 1.8 cm. longae, medio ad 9 mm. diam., margine non, vel vix, excavato; receptaculum late obconicum vel semiglobosum, 4—5 mm. longum, 8—9 mm. diam.; sepala inferne complanata, exteriora acuta, ad 1.2 cm. longa, basi ad 7 mm. lata, interiora prope apicem subulata valdeque compressa, marginata, 8—10 mm. longa, basi 3—5 mm. lata; petala exteriora 2-seriata, e supra medium inferne angustata, obtusa vel rarius acuta, primum sordide rubra, nitentia cum cuprea, deinde vinaceo purpurea, ad 2.5 cm. longa, 1—2 mm. lata, interiora pauca acuminata, 1.1—1.4 cm. longa, ad 0.5 mm. lata; staminodia nulla; stamina 6—7-seriata, erecta conferta, ad 1.1 cm. longa, filamentis omnibus prope basin ciliate papillatis, pallidis, exterioribus superne roseis vel aurantiacis, interioribus prope medium dense papillatis albis, antheris pollineque aureis; ovarii lobi erecti, valde compressi, discum inconspicuum fere attingentes, ad 2 mm. elevati; stigmata 6—7 mm. longa; capsula non visa. Cetera generis.

Cape Prov.: Namaqualand; Richtersveld, "ridge between Anisfontein and Bloeddrift," *P. van Heerde*. Fl. hort. van Heerde, April 1962. N.B.G. 251/62.

In the key to **Astridia** published here in July 1961 (vol. 27: 174) the only glabrous species quoted is **A. longifolia**, from the glabrous form of which **A. vanheerdei** is distinguished chiefly by the glaucous green colour in cultivation of the herbaceous parts, the greater diameter of the leaves and the absence of staminodes. The distinction between the two species may be briefly expressed and be added to the key as follows:

- 1a. Diameter of leaves up to 1 cm.; staminodes present . . . *longifolia*
- 1b. Diameter of leaves 1.5—2.2 cm.; staminodes absent . . . *vanheerdei*

Generic characters have not all been repeated in the description of this new species. Mr. van Heerde describes the colour of the petals as being "a dirty cerise when the flower begins to open, changing to a plum-wine colour." The collection was made "several years ago".

Conophytum productum L. Bol. sp. nov. (*Cataphracta*).—Vaginae persistentes anni prioris pergamentaceae vel subcoriaceae, inferne longitudinaliter costatae, inferne brunneae, superne griseae; corpuscula plura visa, fera et culta, obconica, inferne ultra basim pedunculi valde producta, in cultis interdum per dimidium corpusculi itaque vaginae persistentes basi quasi stipitatae, supra (si singula in vagina evoluta, circularia, fera 1 cm., culta 1.4–1.7 cm., longa, 1 cm. et ad 1.6 cm. lata diametroque, ore 2.5–4 mm. longo, labiis leviter tumidis, fossis obscuris; pedunculi prope basim bracteati, 3–7 mm. longi; bractee virides papillatae, 1.5–2 mm. longae, lobis brevissimis, late obtusis vel subtruncatis; calyx brunneo ruber, 4–6 mm. longus cum tubo 2–3 mm. longo, segmentis 6, aequilongis, 2 mm. longis, vel interdum exterioribus ad 3 mm. longis; corolla 1 cm. longa, tubo cylindrico albo, 4 mm. longo, segmentis ca. 3-seriata, obtusis vel interioribus acutis, supra pallidissime salmoneis, externe pallide roseis, rarius ad 1 mm. latis; stamina ca. 4-seriata, e parum infra medium ad apicem tubi orta, fere omnia exserta, suprema ultra medium segmentorum attingentia, filamentis inferioribus albis, ceteris luteis vel aureis, antheris pollineque aureis; discus conspicuus, fere ad 0.5 mm. altus; ovarium subconice fere ad 0.75 mm. elevatum; stylus nullus; stigmata 6, gracilia, ad 1.5 mm. longa.

Cape Prov.: Namaqualand; "between Eenriet and Steinkopf", Mart. 1960, *H. Hall* 2011. N.B.G. 363/60. Fl. Apr. 1960 et 1962.

C. thudichumii L. Bol. sp. nov. (*Cataphracta*).—Corpuscula 4 visa, vaginis persistentibus pergamentaceis vel subcoriaceis, late obconica, supra plana, fere circularia, dilute glaucae viridia, 1.1–1.7 cm. longa, 1.2–1.5 cm. lata diametroque, ore leviter tumido, pallidiore, 3–4 mm. longo, fossis nullis; pedunculi 4–5 mm. longi, a receptaculo vix distincti, basi bracteati, bracteis herbaceis, pro sectione conspicuis, 3 mm. longis, tubo viridi, lobis conspicue rubre papillatis, tubo leviter longioribus, sinu lato vel excavato; receptaculum 1.5 mm. longum, ad 3 mm. diam.; calyx brunneo ruber, ad 7 mm. longus, tubo ad per tres partes incluso, segmentis 6, obtusis vel subacutis, subcarnosis, inter brevissimos in sectione, 1.5–2 mm. longis; corolla 1.9–2.3 cm. longa, tubo fere cylindrico, pallido, 8–10 mm. longo, segmentis ca. 3-seriatis, parum inaequilongis, prope basim leviter angustatis, apice rotundatis,

luteis, ad 1 mm., vel parum ultra, latis; stamina ca. 5-seriata, e prope medium ad apicem tubi adnata, saepe 3 mm. longa, pro sectione breviter exserta, antheris pollineque primum luteis; discus conspicuus, segmentis truncatis, 0·5 mm. altus; ovarium late conicum, ad 0·75 mm. elevatum, lobis vix compressis; stylus 0·75 mm. longus; stigmata gracillima, 3 mm. longa.

Cape Prov.: Namaqualand; "¼ mile W. of Walle Kraal on road to Hondeklip Bay", June 1954, *J. Thudichum*. Karoo Garden 55/60. Fl. Feb. 8, 1961.

C. aequatum L. Bol. sp. nov. (*Cataphracta*).—Corpuscula late sub-obconica, saepissime obliqua, lateribus $\pm$ inaequilongis, latere altero magis curvato, supra fere circularia, plana vel leviter convexa, pallide glauce viridia, 1·5—1·8 cm. longa, 1·3—1·7 cm. lata diametroque, ore 3—5 mm. longo, labiis arte appressis itaque lineam leviter elevatam formantibus, in florentibus tantum leviter tumidis tumque fossis obscuris ornatis; pedunculi 4—5 mm. longi, basi bracteati; bractee subhyalinae, ca. ad 2 mm. longae, lobis latissimis obtusis papillatis, tubo aequilongis, sinu angusto; receptaculum 1·5 mm. longum, ad 3·5 mm. diam.; calyx 7 mm. longus, tubo pallide brunneo, 4 mm. longo, segmentis brunneo rubris subaequalibus; corolla saepissime 2·8 cm. longa in floribus multis visis in plantis pluribus, tubo superne leviter ampliato, pallide lutea, ad 1 cm. longo, segmentis ca. 3-seriatis, prope basim leviter angustatis, acutis vel rarius obtusis, aureis, 1·2—1·8 cm. longis, 0·25—1 mm. latis; stamina ca. 5-seriata, e parum infra medium ad apicem tubi adnata, filamentis luteis vel aureis, ca. ad 5 mm. longis, antheris pollineque pallide luteis; segmenta disci subtruncata; ovarium e disco conice elevatum ad 0·75 mm., lobis vix compressis, dorso complanatis; stylus 1·5 mm. longus; stigmata stylo aequilonga (itaque nomen); capsula 1 visa, infra late obconica, brunnea, conspicue saturate brunneo maculata, 2·5 mm. longa, supra circularis (angulis nullis), plana, suturis non compressis, 5 mm., expansa 9 mm., diam.

Cape Prov.: Namaqualand; Steinkopf, *H. Hall*, N.B.G. 847/48. Fl. Mart. 1962.

C. komkansicum L. Bol. sp. nov. (*Cataphracta*).—Corpuscula latissime obovata, saepe valde obliqua, lateribus inaequilongis, supra plana vel leviter convexa, glauce viridia, 1·8—2 cm. longa diametroque, 1·4—1·8 cm. lata, ore 3—4 mm. longo, labiis in vivis non incrassatis, fossis nullis; pedunculi superne ampliati, 5—8 mm. longi, ad 4 mm. diam., a receptaculo non distincti, parum supra basim bracteati; bractee ad 4 mm. longae, lobis ca. 1 mm. longis, late obtusae vel altero truncato, sinu latissimo;

receptaculum 1.5—2 mm. longum, 3—4 mm. diam.; calyx brunneo ruber, ad 8 mm. longus, tubo ad 5 mm. longo, fere omnino incluso, segmentis 6, 2—3 mm. longis; corolla 1.6—1.9 cm. longa, tubo cylindrico albo, 8—9 mm. longo, segmentis 3-seriatis, e parum supra medium inferne leviter angustatis, saepius obtusis, inferne pallide, superne saturatiore, luteis vel aurantiacis, exterioribus parum inaequilongis, 0.5—1 mm. latis; stamina 4-seriata, e parum supra medium ad apicem tubi adnata, filamentis albis, ad 5 mm. longis, antheris pollineque primum pallide luteis; discus conspicuus, fere ad 0.75 mm. altus, segmentis truncatis; ovarium e disco conice ad 1 mm. elevatum, lobis dorso complanatis, angulis lineam impressam formantibus; stylus nullus; stigmata 6, gracillima, 3—5 mm. longa.

Cape Prov.: Namaqualand; Komkans, Oct. 1954, *H. Hall*. N.B.G. 898/54. Fl. Apr. 1959 et 1962.

Forma, in eodem loco temporeque collecta, corpuscula late subobconica (i.e. lateribus minus convexus) habet. *H. Hall*. N.B.G. 899/54. Fl. Mart. 1961.

C. namiesicum L. Bol. sp. nov. (*Cataphracta*).—Corpuscula 2 visa, fera, latissime obovata vel fere rotundata, supra leviter convexa, 1.3—1.4 cm. longa, parum infra apicem latissima ibique 1.7—1.8 cm. lata, 1.6 cm. diam.; pedunculi 5—6 mm. longi, superne ampliati, inter crassissimos in sectione, apice 4 mm. diam.; bractae basales, fere omnino connatae, obtusae, sinu lato, 1.5—2 mm. longae; receptaculum 1.5—2 mm. longum, ad 4 mm. diam.; calyx brunneo ruber, magnus pro corolla parva, ad 7 mm. longus, tubo 3—4 mm. longo, segmentis 6, carnosus, siccis subinduratis 2—4 mm. longis; corolla ad 1.1 cm. longa, tubo cylindrico pallido, 5 mm. longo, segmentis ca. 3-seriatis, obtusis luteis, vix ad 1 mm. latis; stamina ca. 5-seriata, e parum supra medium ad apicem tubi orta, pallide straminea vel albida, suprema ultra medium segmentorum exserta, antheris ante dehiscentibus ad 1.5 mm. longis; discus profunde divisis, segmentis ca. 21, truncatis, integris vel obscure emarginatis; ovarium supra convexum, altitudinem disci parum excedens, ad 0.75 mm. elevatum; stylus nullus; stigmata 6, angustissime subulata, pro sectione sat crassa, 2 mm. longa; capsula 1 visa, brunnea, saturatiore brunneo maculata, infra brevissima scutellaeformisque (saucer-shaped), ca. 0.75 mm. longa, supra plana, medio tantum levissime elevata, 4 mm., expansa 7 mm. diam.; semina late obovata, minuta.

Cape Prov.: Bushmanland; Namies, Apr. 1959, *H. Hall*. N.B.G. 289/59. E feris descriptum.

C. leopardinum (*Derenbergia—Oviger*) L. Bol. sp. nov.—Ad **C. laetum** L. Bol. et **C. australe** L. Bol. valde affine, sed vagina persistente conspicue

brunneo maculata, lateribus corpusculi convexioribus, carina obscura brevique, segmentis calycis stigmatibusque constante 4, praecipue differt.

Plantae plures visae, typica 4 cm. alta, 8 cm. et 11 cm. diam., cum corpusculis lateralibus in eadem vagina nondum florentibus, e corpusculis ca. 60 composita; vagina persistens anni prioris pallide brunnea, e parum infra medium superne conspicue saturate brunneo maculata (itaque nomen); rami primarii in plantis senectis 4 cm. longi, reliquiis deustis dense vestiti; corpuscula late obovata, lateribus superne valde convexis, e prope apicem tantum inconspicue carinata, carina linea purpurea brevi, interdum dimidium apicis fere attingente, ornata, e parum infra medium superne capillaceo papillata, glauce viridia, inconspicue sparseque viridi-punctata, ad 1.2 cm. longa, prope apicem ad 8 mm. lata diametroque, parte pellucida vix visa, ore medio utrimque macula purpurea notato, 1.5—2 mm. longo, labiis leviter ringentibus formantibusque figuram subrhomboideam (aliter lobis nullis), omnino papillatam, papillis densis longioribusque; pedunculi 4—6 mm. longi, prope basim bracteati; bractee submembranaceae, vix ad 2 mm. longae, lobis truncatis, tubum leviter excedentibus, marginibus contiguis, itaque sinu angustissimo; receptaculum ad 1.5 mm. longum, ad 2 mm. diam.; calyx membranaceus, primum tubo viridi 4-vittato segmentisque viridibus, ad 7 mm. longus segmentis 4, obtusis vel subacutis, subaequalibus, ad 2 mm. longis; corolla 1.4—2.3 cm. longa, tubo superne leviter ampliata, inferne albo, 7—11 mm. longo, segmentis obtusis aureis, exterioribus 2—3-seriatis, obtusis subaequilongis, 1—1.5 mm. latis, interioribus minoribus paucis; stamina ca. 5-seriata, filamentis inferioribus pallidis, superioribus exsertis aureis, antheris pollineque luteis, ovarium conice elevatum ad 0.5 mm., lobis vix compressis, dorso complanatis; stylus aureus, 5—7 mm. longus, stigmatibus 4, 2—3 mm. longis; capsula 1 visa, conspicue brunneo maculata, supra medio acute conice ad 0.75 mm. elevata, ad 4 mm., expansa 7 mm., diam.

Cape Prov.: Namaqualand; "10 miles N. of Soebatsfontein", Nov. 1960, *H. Hall* 2178. N.B.G. 1023/60. Fl. Mart. 1962.

Ophthalmophyllum littlewoodii L. Bol. sp. nov.—Vaginae persistentes brunneae vel pallide brunneae; partes herbaceae virides, omnino minutissime nitente papillatae; corpuscula 6 visa, solitaria, cylindrica, in genere minima visa, 1—1.6 cm. longa, lobis fere erectis, 2—3 mm., vel usque ad apicem fenestrae ad 4 mm., longis, basi rotundata ibique 4—6 mm. lata diametroque, interdum prope apicem vaginae leviter constricta ibique 3—4 mm. lata diametroque, apice, cum divergio ad 2 mm., ad 7 mm. diam.; fenestrae conspicue transparentes, convexae, parce verruculosae, "fenestrelis" ("windowlets") in lateribus sat paucis, linearibus vel ovali-

bus; pedunculi 4—9 mm. longi; bracteae late membranaceo marginatae, obtusae vel acutae, 2·5—8 mm. longae, vagina ad 3 mm. longa, sinu lato; receptaculum ad 3 mm. longum cum tubo ca. 1 mm., ad 2 mm. diam.; calyx 4—6 mm. longus, segmentis 5, acutis vel obtusis, subaequilongis, 2 mm., vel in flore maximo ad 4·5 mm., longis; corolla 8—12 mm. longa, tubo ad 2·5 mm. longo, per 1·5 mm. ad calycem adnato, vel in flore unico fere omnino libero, segmentis 2—3-seriatis, e parum supra medium inferne angustatis, dimidio inferiore albo vel pallido, superiore roseo, ad 1·25 mm. latis; staminodia pauca; stamina 4—5-seriata, e basi ad fere apicem tubi orta, circa partem tertiam segmentorum attingentia, filamentis albis, antheris pollineque luteis; ovarium subconice ad 0·5 mm. elevatum; stylus ca. ad 1 mm. longus; stigmata 5, lutea, 5—7 mm. longa.

Cape Prov.: Namaqualand; "23 miles S. of Viol's Drift, on the Steinkopf Road", Maio 1961, *R. C. Littlewood*. Karoo Garden 302/61. Fl. Mart.—Apr. 1962.

"Growing on a slight undulation of the ground covered with quartz. This is the smallest of the genus I have ever seen and is almost impossible to be seen in its natural habitat without going on one's hands and knees" (*Littlewood*).

This distinct species is the only one to be recorded in the genus with constantly (i.e. in the 4 flowers dissected) 5 calyx-segments and stigmas. The usual number in the genus is 6, and 7 or 5 seem to have occurred in species where the normal number is 6.

O. longitubum L. Bol. sp. nov.—Corpuscula 8 visa, singula vel bina, oblonga vel cylindrica, leviter lateraliter compressa, viridia, dimidio superiore saepissime breviter papillate pubescente, minima 10 mm. longa, 6 mm. lata, 8 mm. diam., cetera 1·5—1·8 cm. longa, 5 mm. et 4 mm. lata, 11 mm. et 9 mm. diam., lobis erectis, 1·5—2 mm. longis, fenestris convexis, conspicue transparentibus, "fenestrulis" ("windowlets") interdum dimidium corpusculi attingentibus; pedunculi 7—9 mm. longi; bracteae carinatae, lat. visae obtusae, 6—7 mm. longae cum vagina 2 mm. longa; receptaculum 3 mm. longum cum tubo 1—1·5 mm., 1·5 mm. diam.; calyx ad 1·2 cm. longus, tubo ad 9 mm. (itaque nomen), segmentis 6, obtusis vel acutis, subaequilongis; corolla 1·4—1·8 cm. longa, tubo 4—6 mm., vel rarius ad 7 mm., longo, omnino ad calycem adnato, segmentis exterioribus ca. 2-seriatis, e parum supra medium inferne angustatis, apice rotundatis vel subtruncatis, pallide roseis vel rarius albis, 1—2 mm. latis; staminodia sat pauca; stamina ca. 4—8-seriata, e parum supra basim fere ad apicem tubi orta, superiora ca. partem tertiam segmentorum attingentia, filamentis albis vel luteis,

antheris pollineque luteis; discus inconspicuus; ovarium subconice ad 0.5 mm. elevatum; stylus non bene distinctus, ca. ad 1 mm. longus; stigmata 6, ad 1.2 cm. longa.

Cape Prov.: Bushmanland; "25 miles W. of Goodhouse on the way to Jakkalswater, Maio 1961. *R. C. Littlewood*. Karoo Garden 303/61. Fl. Mart. 1962.—"This was growing about 30 yards from the base of a quartz koppie and only on the south-eastern side" (*Littlewood*).

O. villetii L. Bol. sp. nov.—Corpuscula 4 visa, solitaria, lat. visa oblonga vel obovate oblonga, basi rotundata, 2.2—2.6 cm. longa, medio ad 1.1 cm. lata, prope apicem 1.5 cm. diam. cum divergio 4 mm., vel corpusculum (non florens) 1 subcylindricum 3.2 cm. longum, prope apicem 2 cm. diam. cum divergio 4 mm., lobis 3—7 mm. longis, intus conspicue, dorso minus conspicue, pubescentibus, fenestris convexis; flores diurni; pedunculi 1.2—1.8 cm. longi, bracteis lat. visis obtusis, 1—1.5 cm. longis; receptaculum 6 mm. longum cum tubo 2.5 mm. longo, 3 mm. diam.; calyx 7—8 mm. longus cum tubo ad 3 mm. longo, segmentis 6, obtusis 4—5 mm. longis vel subaequilongis; corolla 1—1.3 cm. longa, tubo 1.5—2 mm. longo, omnino ad calycem adnato, segmentis exterioribus 2—3-seriatis, saepe e medio inferne angustatis, apice rotundatis vel interdum prope apicem leviter angustatis, obtusis, inferne pallide, superne laetissime, roseis vittatisque, 0.5—1.5 mm. latis; staminodia gracilia, obtusa vel acuta, alba, stamina excedentia; stamina 3—4-seriata, fere omnia ex apice tubi orta, 4—6 mm. longa, filamentis saepius luteis, basi inconspicue papillatis, antheris pollineque primum luteis, deinde albis; discus quasi e segmentis 6 crenulatis coalitis compositus; ovarium conice ad 0.75 mm. elevatum; stylus ca. 1 mm. longus; stigmata 10 mm. longa, stamina bene excedentia.

Cape Prov.: Bushmanland; Brakwater, Jul. 1937, *A. C. T. Villet*. N.B.G. 1063/37. Fl. Apr. 1938.

O. vanheerdei L. Bol. sp. nov.—Plantae 3 visae, e corpusculis pluribus compositae; corpuscula lat. visa late obovata vel oblonge obovata, prope medium leviter constricta, deinde superne gradatim ampliata, basi rotundata, subrubre brunnea, 3 cm., vel dorso ad apicem fenestrae 3.4 cm., longa, in medio vaginae 1.3—1.7 cm. lata, apice, cum divergiis 3—5 mm., ad 3.3 cm. diam., lobis interdum inaequilongis, intus pubescentibus, ad 5 mm. longis, fenestris strictis vel e dorso ad fissuram leviter declinatis, convexis transparentibus, "fenestris" sat pauca, circularia; flores diurni, maximus visus e basi pedunculi ad apicem corollae 3.8 cm. longus; pedunculi ad 1.6 cm. longi, medio bracteati, bracteis, cum vagina 1.5 mm. longa, ad 1.5 cm. longis; receptaculum, cum tubo ad 2 mm.

longo, ad 6 mm. longum, 5—6 mm. diam.; calyx 1.2 cm. longus, tubo 7 mm. longo, segmentis acutis vel obtusis, 5—6 mm. longis, basi 2—3 mm. latis; corolla ad 2 cm. longa cum tubo ad 6 mm. longo, ad calycem per 3 mm. adnato, segmentis exterioribus 2—3-seriatis, e supra medium inferne angustatis, apice rotundatis, albis vel pallide roseis, 0.5—2.25 mm. latis; stamina 6-seriata, e basi fere ad apicem tubi corollae orta, alba, ad 6 mm. longa; ovarium conice ad 0.75 mm. elevatum; stylus nullus vel subnullus; stigmata ad 1.3 cm. longa; capsula infra semiglobosa 6-angulata angulis rotundatis, 3 mm. longa, supra plana, medio vero tantum elevata, 6—8 mm., expansa 1—1.5 cm., diam., pedunculo superne ampliato; semina late piriformia, pallide brunnea, minutissima.

Cape Prov.: Bushmanland; "about 10 miles east of Pofadder", 1957, *P. van Heerde*. Fl. hort. van Heerde Mart.—Apr. et Jun. 1959. N.B.G. 340/59.

O. haramoepense L. Bol. sp. nov.—Plantae 2 visae, altera e corpusculo 1, altera e corpusculis 2, compositae; corpuscula lat. visa ovalia vel oblonge obovata, basi rotundata, apice vaginae leviter constricta, pallide glaucae viridia, ad 2.2 cm. longa, medio ad 1.1 cm. lata diametroque, prope apicem loborum, cum divergio 3 mm., ad 1.4 cm. diam., lobis (fenestra exclusa) 2—4 mm. longis, fenestris valde convexis transparentibusque, 4—5 mm. diam.; flores diurni; pedunculi 7—10 mm. longi, bracteis a basi 4 mm. positae, 1.2 cm. longae cum vagina 4 mm. longa, apice pubescentibus; receptaculum ad 5 mm. longum cum tubo 2 mm., ad 3.5 mm. diam.; calyx 1.2 cm. longus cum tubo 6 mm., segmentis acutis vel obtusis, subaequilongis; corolla ad 1.9 cm. longa, tubo ad 7 mm. longo, per 5 mm. ad calycem adnato, segmentis exterioribus ca. 3-seriatis, e parum supra medium inferne angustatis, apice rotundatis vel emarginatis, purpureo roseis, 1—1.5 mm., vel vix ad 2 mm., latis; staminodia alba; stamina 4-seriata, e parum supra basim fere ad apicem tubi orta, breviter exserta, filamentis albis, ad 5 mm. longis, antheris pollineque primum luteis; discus e segmentis ca. 9 compositus; ovarium medio anguste conice fere ad 1 mm. elevatum; stylus ad 4 mm. longus; stigmata 6, stamina bene excedentia, 1 cm. longa.

Cape Prov.: Namaqualand; Haramoep, Apr. 1937, *P. van Heerde*. Bolus Herb. 27139.

O. spathulatum L. Bol. sp. nov.—Corpuscula plura visa, solitaria, vaginis unici per 4 annos persistentibus, suboblonga vel subquadrata, inferne rotundata, parum supra medium leviter constricta, minute papillate pubescentia, 2.4—2.7 cm. longa, apice vaginae 2.1—2.5 cm., basi fenestrarum (sine divergio) ca. ad 2.7 cm., diam., parum infra

medium ad 1.4 mm. lata, lobis interiore sat conspicue pubescentibus, ad 5 mm. longis, fenestris convexis, in siccis brunneis, ad 1.1 cm. latis, ad 9 mm. diam., per 1—2 mm., vel in corpusculis florentibus per 7 mm., divergentibus; pedunculi 1—1.5 cm. longi, superne ad per 4 mm. ampliati; bracteae ad 2 cm. longae cum vagina ad 8 mm. longa; receptaculum 5—6 mm. longum cum tubo 1.5—2.5 cm. longo, medio 3—6 mm. diam., inter maxima in genere visa; calyx ad 8 mm. longus, segmentis saepissime 6, vel 8 autem visis, 4—5 mm. longis, basi 1.5—3 mm. latis; corolla 1.6—1.8 cm. longa, tubo ca. 5 mm. longo, ad calycem per 2 mm. adnato, segmentis 2—3-seriatis, exterioribus spathulatis, pallide roseis, inter latissima in genere, ad 3 mm. latis, intimis linearibus, 0.5 mm. latis; staminodia subnulla; stamina 6—7-seriata, breviter exserta, filamentis quasi decurrente ad tubo adnatis, parte libera e parum supra basim fere ad apicem tubi orta, alba, ad 6 mm. longa, antheris pollineque primum luteis, demum albis; discus 0.5 mm. altus; ovarium planum, medio vero conice ad 0.75 elevatum; stylus nullus; stigmata 6, vel 8 autem visa, lutea, ad 1.1 cm. longa.

Forma.—In flore unico viso nectarium quasi e glandulis 6, approximatis vel coalitis compositum; ovarii lobi stellate patentibus compressisque.

Cape Prov.: Namaqualand; Ratelkraal, "25 miles from Springbok on the road to Pofadder", *H. Hall*. N.B.G. 1107/50. Fl. Maio 1951.

The following 2 collections also appear to be forms of this species—(1) "23 miles E. of Springbok on the road to Pofadder" *H. Hall*. N.B.G. 1095/50. Fl. Mart. 18, 1951, (2) "On the main road between Springbok and Smorgenskadu, Sept. 19, 1950", *P. H. B. van Breda* 294. Fl. Worcester Veld Reserve, April 1951.

The lower part of the filaments appearing to be decurrently adnate to the corolla-tube does not seem to have been noted in any other species of this genus.

Erepsia hallii L. Bol. sp. nov.—Erecta compacta, conspicue intricata ramosa, 19 cm. alta, ca. 24 cm. diam.; rami primarii saepe decurvati vel patentes, rigidi, asperi ob tuberculas siccas, saepe excavatas, brunneas, aliter albidis, ad 18 cm. longi, internodiis 1—2 cm. longis, ad 2 mm. diam., secundarii saepius alternatim evoluti, saepe arcuate decurvati, 4—8 cm. longi, ultimi floriferi 4—10 mm. longi; partes herbaceae tuberculatae, tuberculis novellis papillas simulantibus, cultae saturate virides; folia primaria erecta, demum patentia, supra plana acuta, acute carinata, lat. visa e supra medium superne angustata, apice uncinata recurva, apiculata, 8—17 mm. longa, 1.5—3 mm. lata diametroque; flores sessiles vel subsessiles, vespere claudentes (fide *Hall*), senectissimi per noctem

aperti, ad 1.5 cm. diam., inter minimos in genere; bractee 2—4, late ovatae, marginatae, 3—4 mm. longae; receptaculum semiglobosum, 2 mm. longum, 4 mm. diam., tubo brevissimo; sepala 5, acuta, subaequilonga, ad 3 mm., vel in flore altero ad 4 mm., longa, extima apice recurva apiculata, intima ample marginata, membranis brunneo-striatis; petala ca. 4-seriata, sat laxa, alba, ad 5 mm. longa, 0.5—1 mm. lata, exteriora anguste spathulata, interiora sat pauca, linearia; staminodia conice conferta, acuta vel acuminata, viridia, exteriora superne rubre brunnea, interiora ea parum excedentia, ad 4 mm. longa, stamina omnino occultantia; stamina ca. 6-seriata, exteriora fere erecta, ad 2 mm. longa, interiora decurvata, intima ovarium attingentia, filamentis pallide viridibus, antheris pollineque albidis; discus pro genere sat conspicuus; ovarium supra circa marginem planum, lobis superne acute compressis, dorso complanatis, levissimis, ad 0.75 mm. elevatis; stigmata 5, erecta, anguste subulata, ad 2 mm. longa.

Cape Prov.: in dit. Malmesbury; Klipberg, prope Darling, Jun. 22, 1961, *H. Hall* 2229. Fl. Feb.—Mart. 1962. N.B.G. 298/61.

Note.—In 1820 (Rev. pp. 76—79) Haworth divided the genus **Mesembryanthemum** into 69 sections, of which 5 were composed of perennial papulose plants with subterete or terete leaves. The sections were numbered—61 *Digitiflora* (*Splendens* Salm Dyck), 62 *Juncea*, 63 *Spinulifera* 64, *Trichotoma* and 65 *Noctiflora*. This sequence indicates that they were recognised as closely related groups even in those early days. For more than 120 years later they were found by N. E. Brown all to have 2 supremely important characters in common, namely the central placentation of the ovules and the loculi of the ovary without a covering membrane. He also found distinctive generic characters and in 1925, in a key (amplified in 1928), separated the 3 genera—**Psilocaulon**, based upon § *Juncea*, **Sphalmanthus** on § *Spinulifera*, and **Aridaria** on § *Digitiflora*, § *Trichotoma* and § *Noctiflora*. Two Linnaean species, *M. noctiflorum* and *M. splendens*, are represented in these sections and *M. geniculiflorum* L. should also have been included. Haworth placed it in a section with papulose annuals having subterete leaves, but added—“Perhaps belonging to another section or rather one of its own” (“Forte aliae, potiusve suae sectionis”). Necker in 1790 was nearer the mark when he coupled it with *M. noctiflorum* L. to form his genus *Nycteranthus*. In 1952 Schwantes transferred **Aridaria** to the older genus *Nycteranthus*, and later included **Sphalmanthus**, regarding them as 3 subgenera—*Nycteranthus*, *Neoaridaria* and *Sphalmanthus*. In 1960 the status of Necker’s nomenclature was fully discussed at the Nomenclature Congress in Montreal and it was decided that *Nycteranthus* was not a validly

published genus and could not be upheld. **Aridaria**, therefore, with its type-species *M. noctiflora* L. must stand, but restricted to the § *Noctiflora*, which is distinct enough to be separated from the sections *Digitiflora* and *Trichotoma* that seem better placed as subgenera of **Sphalmanthus**. For alternate leaves occasionally occur in them, as opposite ones do in **Sphalmanthus**. But these sections need further revision before a completely satisfactory decision can be made, and the following new species are tentatively placed in **Sphalmanthus** with Haworth's sectional name *Trichotoma* in its masculine plural form *Trichotomi*.

Sphalmanthus stayneri L. Bol. sp. nov. (*Trichotomi*)—Planta erecta glabra, diffuse laxequae ramosa, "16 cm. alta, 58 cm. diam." (*Littlewood*); rami primarii subdecumbentes, pro sectione graciles, lignosi epapillosoi, brunnei, internodiis saepius 2—3 cm. longis, ad 3 mm. diam.; partes herbaceae minute papillosae; folia omnia opposita, supra plana, apice dorsoque rotundata, lat. visa superne ampliata, apice rotundata, ad 1.5 cm. longa cum vagina persistente ad 2 mm. longa; cymae saepius laxae irregulariter copioseque ramosae, ad 25-fl. vel ultra, senectae capsulas maturas alabastrasque eo tempore ferentes; flores diurni; pedunculi ultimi saepius 1—2 cm. longi; receptaculum semiglobosum vel globose obconicum, 4 mm. longum, 6—7 mm. diam.; calyx variabilis, 6—11 mm. longus cum tubo 1.5 mm. longo, segmentis 5, obtusis, aequilongis et 5 mm., vel 5—10 mm., vel 7—9 mm., vel 5.8 mm., vel 8—10 mm. longis, basi 1.5—4 mm. latis; corolla 7—8 mm. longa cum tubo 2 mm. longo, segmentis ca. 3-seriatis obtusis, inferne non, vel leviter, angustatis, parum inaequilongis, exterioribus rubris, interioribus aureis vel luteis vel intimis inferne pallidis, apicem versus aureis, 0.25—0.75 mm. latis; staminodia nulla; stamina ca. 6—7-seriata, superiora dimidium corollae fere attingentia, filamentis albis, antheris pollineque primum pallidissime luteis; ovarium e nectario gradatim conice ad 1 mm. elevatum; stigmata 5, angustissime subulata, superne longe attenuata, rubra, ad 2 mm. longa; capsula 6—8 mm. longa, infra obconica vel subclavata, sat conspicue 10-costata, supra per 2 mm. elevata, lobis acute compressis, dorso concavis; semina madida fere semicircularia, parte rotundata minute cristata, saturate grisea, 1.5 mm. longa, 1.25 mm. lata.

Cape Prov.: in dit. Calvinia; Hantam, Aug. 1961, *F. J. Stayner*. Karoo Garden 128/61. Fl. Feb.—Mart. 1962.

Sphalmanthus hallii L. Bol. sp. nov. (*Trichotomi*)—Planta culta diffuse ramosa, glabra, rami primarii subrigide lignosi, decumbentes leves brunnei, ad 22 cm. longi, ad 6 mm. diam.; rami secundarii $\pm$ erecti, ad 20 cm. longi cum cyma ad 8 mm. longa, internodiis fere levibus,

saepius 1.5—3 cm. longis; partes herbaceae minutissime crebreque papillatae, virides; folia supra fere plana, superne leviter convexa angustataque, acuminata vel acuta vel subobtusa, dorso rotundata, lat. visa apice rotundata vel prope apicem angustata, obtusa vel abrupte acuta, 1—2.3 cm. longa, vagina persistente vix ad 1 mm. longa, medio ad 2 mm. lata, ad 3 mm. diam.; cymae juveniles 3-fl., seniores irregulariter ad 4-ramosae, ad 8 cm. longae, ad 10 cm. diam. vel ultra; flores diurni; pedunculi ultimi superne ampliati, 2—10 mm. longi; receptaculum subglosum vel subclavatum, 4 mm., vel vix ad 5 mm., longum, apice ad 4 mm. diam.; calyx 1—2 cm. longus cum tubo 1 mm., segmentis 5 vel rarissime 4, saepe acuminatis, valde inaequilongis, 5—9 mm., vel 4—10 mm., vel 5—15 mm., longis, basi 2—4 mm. latis; corolla 7—10 mm. longa cum tubo vix ad 1 mm. longo, segmentis ca. 4-seriatis, in staminodia pallida insensim transeuntibus, obtusis vel acutis vel rarius acuminatis, rubre purpureis, 0.25—0.75 mm. latis; stamina ca. 6-seriata, filamentis albis, ad 5 mm. longis, antheris brevissimis, demum fere circularibus, cum polline aureis; ovarium late conicum, vix ad 1 mm. elevatum, lobis acute compressis, dorso leviter concavis; stigmata 5, angustissime subulata rubra, 1.5—2 mm. longa.

Cape Prov.: Namaqualand; "23 miles W. of Khamieskroon", Nov. 1960, *H. Hall* 2189. N.B.G. 1034/60. Fl. Nov.—Jan., 1961—1962.

Note.—The type specimens of all new species described in this paper are in the Bolus Herbarium, University of Cape Town, Rondebosch.

(To be continued.)